

CLAIMS

1. A wafer storage container apparatus for storing a stack of wafer elements, the apparatus comprising:
 - a wafer storage chamber for storing the stack of wafer elements, the wafer storage chamber including a base having a wafer area upon which to place the stack of wafer elements; and
 - a plurality of columns disposed within the wafer storage chamber, each column having a surface with a line of contact to restrict equally lateral movement of each of the wafer elements within the wafer storage chamber.
2. An apparatus as recited in claim 1 wherein each line of contact lies in a direction orthogonal to a plane of the wafer area.
3. An apparatus as recited in claim 2 wherein the wafer storage chamber includes a wall extending from the base, wherein the wall has a draft angle that facilitates removal of the wafer storage chamber from a mold.
4. An apparatus as recited in claim 3 wherein each column is integrally formed with the wall.
5. An apparatus as recited in claim 3 further comprising a cover that conforms with the wall to completely enclose the stack of wafer elements.
6. An apparatus as recited in claim 1 wherein the plurality of columns is in the range of three columns to six columns.
7. An apparatus as recited in claim 6 wherein each line of contact lies in a direction orthogonal to a plane of the wafer area.

8. An apparatus as recited in claim 7 wherein the wafer storage chamber includes a wall extending from the base, wherein the wall has a draft angle that facilitates removal of the wafer storage chamber from a mold.

9. An apparatus as recited in claim 8 wherein each column is integrally formed with the wall.

10. A wafer storage container apparatus for storing a stack of wafers, the apparatus comprising:

a wafer storage chamber;
at least one orientation artifact disposed within the wafer storage chamber;
a plurality of wafer frames adapted for insertion into the wafer storage chamber in a stack, each wafer frame including at least one alignment artifact thereon and each wafer frame being adapted to assist holding one of the wafers in a predetermined position thereon, wherein each at least one alignment artifact corresponds to a corresponding at least one orientation artifact, thereby orienting each wafer frame in the wafer storage chamber and preventing substantial rotational movement of the each wafer frame within the storage chamber; and

a plurality of columns disposed within the wafer storage chamber; each column having a surface with a line of contact to restrict equally lateral movement of each of the wafer frames within the wafer storage chamber.

11. An apparatus as recited in claim 10 wherein the wafer storage chamber includes:
a base upon which to place the stack; and
a wall connected to the base that is adapted to surround the stack.

12. An apparatus as recited in claim 11 wherein the orientation artifact is a wall contour artifact disposed on the wall, and wherein the alignment artifact is a contour artifact disposed on an edge of the wafer frame.

13. An apparatus as recited in claim 11 wherein:

each wafer frame includes a plurality of alignment artifacts and there exists a corresponding plurality of orientation artifacts disposed within the wafer storage container; and

each orientation artifact is a wall contour artifact disposed on a different location of the wall, and wherein each alignment artifact is a contour artifact disposed on an a different edge location of the wafer frame.

14. An apparatus as recited in claim 11 further comprising a cover adapted for insertion on a top of the wall.

15. An apparatus as recited in claim 10 wherein each wafer further includes an alignment artifact.

16. An apparatus as recited in claim 10 wherein each of the wafer frames includes a wafer surface on which one of the wafers rests, and the wafer surface is made of a material that assists in maintaining adhesion between the wafer frame and the wafer disposed thereon.

17. An apparatus as recited in claim 10 wherein each wafer frame includes a plurality of alignment artifacts and there exists a corresponding plurality of orientation artifacts disposed within the wafer storage container.

18. An apparatus as recited in claim 10 wherein the plurality of columns is in the range of three columns to six columns.

19. An apparatus as recited in claim 18 wherein each line of contact lies in a direction orthogonal to a plane of the wafer area.

20. An apparatus as recited in claim 19 wherein the wafer storage chamber includes a wall extending from the base, wherein the wall has a draft angle that facilitates removal of the wafer storage chamber from a mold.

21. An apparatus as recited in claim 20 wherein each column is integrally formed with the wall.